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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: II - CARRY OVER THEORY EXAMINATION - SEPTEMBER 2022

Subject: Design Thinking-I

Time: 3 Hours

Max. Marks: 100

General Instructions:

1. The question paper comprises three sections, A, B, and C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 marker & Question No- 2 carries 2 marks each.
3. Section B - Question No-3 is based on external choice carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice questions carrying 10 marks each.
5. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION A

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1. Attempt all parts:-

- 1-a. The types of observers are: (CO1) 1
- (a) Complete Observer
  - (b) Complete Participant
  - (c) Observer as Participant
  - (d) All of the above
- 1-b. As per the definition of Design Thinking by IDEO, which one is the main component? 1  
(CO1)
- (a) Desirability
  - (b) Feasibility
  - (c) Viability
  - (d) All of the above
- 1-c. After you empathize, the next step is to \_\_\_\_\_: (CO2) 1
- (a) Ideate
  - (b) Feel
  - (c) Define

(d) Prototype

- 1-d. Breaking down a problem into its constituent parts during team discussion is which of the following steps in the standard agenda? (CO2) 1
- (a) Analysing the problem
  - (b) Identification of problem
  - (c) Evaluation Problem Solutions
  - (d) Criteria development
- 1-e. A good problem statement should have the following traits: (CO3) 1
- (a) Human-centered
  - (b) Broad enough for creative freedom
  - (c) Narrow enough to make it manageable
  - (d) All of the above
- 1-f. Characteristics required for successful ideation are: (CO3) 1
- (a) Adapting
  - (b) Connecting
  - (c) Disrupting
  - (d) All of the above
- 1-g. Critical thinking concerns with: (CO4) 1
- (a) Determining the cause of our beliefs
  - (b) Pinpointing the psychological basis of our beliefs
  - (c) Determining the quality of our beliefs
  - (d) Assessing the practical impact of our beliefs
- 1-h. Arguing that a claim must be true merely because a substantial number of people believe it is called the fallacy of: (CO4) 1
- (a) Tu quoque
  - (b) Composition
  - (c) Appeal to the masses
  - (d) Appeal to reason
- 1-i. An argument intended to provide logically conclusive support for its conclusion is: (CO5) 1
- (a) Inductive
  - (b) Valid
  - (c) Deductive

(d) Sound

- 1-j. It is impossible for a valid argument to have true premises and: (CO5) 1
- (a) A true conclusion
  - (b) A negated conclusion
  - (c) A conditional
  - (d) A false conclusion

2. Attempt all parts:-

- 2.a. Explain fear element of DCAFE forces. (CO1) 2
- 2.b. Explain the ethical behaviour.(CO2) 2
- 2.c. Describe How Might We (HMW) questions. (CO3) 2
- 2.d. Define fundamental concepts of critical thinking. (CO4) 2
- 2.e. Is critical thinking primarily about what you think or how you think? Explain. (CO5) 2

SECTION B 30

3. Answer any five of the following:-

- 3-a. Discuss the framework for Creativity and Innovation. (CO1) 6
- 3-b. Explain each one of the three capacity levers that drive the design mind. (CO1) 6
- 3-c. Enumerate significant characteristics of socialiation. (CO2) 6
- 3-d. Describe the brainstorming with its benefits.(CO2) 6
- 3.e. Describe Edward de Bono's six thinking hats and explain their role in problem solving. (CO3) 6
- 3.f. Describe the characteristics of a well cultivated critical thinker. (CO4) 6
- 3.g. Differentiate between deductive argument and an inductive argument. (CO5) 6

SECTION C 50

4. Answer any one of the following:-

- 4-a. Discuss in detail key elements of the design thinking process. Also draw a neat and clean diagram. (CO1) 10
- 4-b. Describe the role of innovation and creativity for any organization. (CO1) 10

5. Answer any one of the following:-

- 5-a. "Physical facilities are necessary and complete for animals, while they are necessary but not complete for humans." Comment. (CO2) 10
- 5-b. Describe the empathy map and its application.(CO2) 10

6. Answer any one of the following:-

6-a. A financial advisor needs a way to have meaningful conversations with more clients because business grows through genuine conversation with clients, not through paperwork. Create a POV statement in this reference. (CO3) 10

6-b. Name few online tools available for Design thinking process. (CO3) 10

7. Answer any one of the following:-

7-a. Compare and contrast between argumentation and rhetoric. (CO4) 10

7-b. Describe the skills required for critical thinking. Can these skills be acquired or they are innate? Opine for both. (CO4) 10

8. Answer any one of the following:-

8-a. Describe the logic. Also differentiate between premise and conclusion. (CO5) 10

8-b. Explain various components of scientific reasoning. Discuss its role in reaching a fair conclusion. (CO5) 10